Then please cancel claims 10 and 11, and amend claims 1, 5-7 and 15 to now read as follows:

1. An indicator protein comprising:

   a) a first binding moiety having a binding domain specific for a class of analytes that undergoes a reproducible allosteric change in conformation when said analytes are reversibly glucose bound;

   b) a second moiety and third moiety that are covalently linked to either side of said first binding moiety in a manner that said second and third moieties undergo a change in relative position when said analyte molecule binds to said first binding moiety; and

   c) said second and third moieties interact to produce a fluorescent change when the relative positions of said second and third moieties change, wherein said fluorescent change can be monitored remotely by external optical means.

5. The protein of claim 2, wherein

   a) said first binding moiety is a glucose binding protein from E. coli;

   b) said second moiety is YFP; and

   c) said third moiety is GFP.

6. The protein of claim 5 having the plasmid sequence shown in SEQ ID NO: 1.

7. A biosensing system for glucose comprising:

a) a biosensor element consisting of a protein

i. having a first binding moiety, which is a glucose binding protein from E. coli, having a binding domain specific for glucose that undergoes a reproducible allosteric change when glucose is reversibly bound;

ii. having a second moiety and third moiety that are covalently linked to either side of said first binding moiety in a manner such that they change in relative position when glucose binds to said first binding moiety and wherein said second moiety and said third moiety interact to produce a fluorescent change when their relative positions change wherein said fluorescent change can be monitored remotely by external optical means; and

iii. that is immobilized to a solid surface or retained within a permeable capsule;

b) the placement of said biosensor element in subcutaneous contact with a fluid of interest so that said biosensor element can be illuminated and emitted light detected; and

c) an external optical system for illumination of said biosensor element and detection of emitted radiation.

15. A method for noninvasively measuring glucose within cells wherein

a. plasmid coding for a protein having

i. a first binding moiety having a binding domain specific for a class of analytes that undergoes a reproducible allosteric change in conformation when said analytes are reversibly glucose bound;

ii. a second moiety and third moiety that are covalently linked to either side of said first binding moiety in a manner that said second and third moieties undergo a fluorescent change in relative position when said analyte molecule binds to said first binding moiety; and

iii. said second and third moieties undergo a fluorescent change in optical properties when the relative positions of said second and third moieties, wherein said change can be monitored remotely by external optical means when introduced into cells;

b. said protein is expressed in the cells; and

c. said fluorescent changes are measured optically by an external instrument having an optical system for illumination and detection of emitted radiation.